

ABSTRACT OF THE DISCLOSURE

A plasma processing system includes a vacuum chamber having a gas introducing unit, and an electromagnetic wave introducing planar plate and electromagnets disposed in the chamber. A distance between the planar plate and a sample is equal to or less than one half of the smaller one of the diameters of the planar plate and the sample. An electromagnetic wave with a frequency ranging from 300 MHz to 500 MHz and an electromagnetic wave with a frequency ranging from 50 kHz to 30 MHz are superposed to the planar plate. Reaction between the resultant electromagnetic wave superposed and a magnetic field of the electromagnets generates plasma to achieve plasma processing of the sample.